

Appl. No. 10/539,795; Docket No. NL 030180 US
Amdt. dated October 11, 2006
Response to Office Action dated September 7, 2006

Amendments to the Claims

1. (*Currently Amended*) An array of magnetic memory cells provided with at least one security device, wherein the at least one security device comprises
a first magnetic element and a second magnetic element each having a pre-set magnetization direction, the pre-set magnetization direction of the first and second magnetic elements being different from each other, the first and second magnetic elements being suitable for aligning their magnetization direction with magnetic field lines of an externally applied magnetic field, to thereby indicate exposure of the array to said externally applied ~~magnetic field~~; magnetic field; and
a conductor placed over the first magnetic element and the second magnetic element of the security device, the conductor providing a current path for creating an initializing magnetic field to pre-set each magnetization direction of the first and second magnetic element, the initializing magnetic field having a first polarity at the first magnetic element, and a second polarity at the second magnetic element, the second polarity opposite the first polarity.
2. (*Previously Presented*) An array of magnetic memory cells according to claim 1, wherein the first and second magnetic elements comprise MRAM-cells.
3. (*Currently Amended*) An array of magnetic memory cells according to claim 2, the MRAM-cells having a free magnetic layer, wherein the MRAM-cells have pre-set inverse magnetization directions ~~of their~~ of the free magnetic layer.
4. (*Previously Presented*) An array of magnetic memory cells according to claim 1, wherein the security device is built adjacent to the magnetic memory cells that have to be protected.
5. (*Previously Presented*) An array of magnetic memory cells according to claim 1, there being a plurality of security devices spatially distributed amongst the magnetic memory cells in the array.

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6. (*Original*) An integrated circuit comprising an array of magnetic memory cells according to claim 1.

7. (*Currently Amended*) An integrated circuit according to claim 6, furthermore comprising a control circuit for erasing data content of the magnetic memory cells or for blocking the functioning of the integrated circuit upon indication by the security device of exposure of the array to ~~an~~ the externally applied magnetic field.

8. (*Currently Amended*) A method for indicating exposure of an array of magnetic memory cells to an external magnetic field, ~~the method comprising the method~~ comprising:

initializing magnetization directions of a magnetic security device, using a single conductor providing an initializing magnetic field over the magnetic security device,

wherein the security device includes a first magnetic element and a second magnetic element, each magnetic element being initialized in anti-parallel directions,

wherein the first magnetic element is initialized in a first pre-set magnetization direction and the second magnetic element initialized in a second pre-set magnetization direction, the first and second pre-set magnetization directions being different from each other, the changing of the pre-set magnetization directions comprising aligning the magnetization direction of at least one of the first and second magnetic elements with the external magnetic field;

exposing the array to the external magnetic field; and

changing a pre-set magnetization direction of a magnetic security device, when the array is exposed to the external magnetic field.

9. (*Cancelled*)

10. (*Currently Amended*) A method according to claim 8, wherein the changing of the pre-set magnetization directions ~~comprising~~ comprises changing the magnetization direction of at least one of two inversely magnetized MRAM-cells.

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11. (*Original*) A method according to claim 8, the method further comprising determining the change in magnetization direction.

12. (*Currently Amended*) A method according to claim 11, the security device comprising a first and a second MRAM-cell with ~~a pre-set~~ the pre-set magnetization direction, wherein the change in magnetization direction is determined by measuring a resistance difference of the first and second MRAM-cells of the security device.